XG2330 E1/Datacom Transmission Analyzer

DATASHEET

Flexible combination and comprehensive analysis, XG2330 is a powerful handheld instrument, providing a scalable, future-proof solution for testing 2Mb/s and N×64kb/s digital circuits. Through the easy-to-download testing options, XG2330 offers full-featured measurements of error, alarm, signaling, tone and timeslot data, and helps to verify quality-of-service in your networks. It can be widely used in the R&D, production, installation, verification and maintenance of SDH, PDH, PCM, DTU and Data protocol converter equipments.

Main Features

- Handheld design, easy-to-use
- Full-featured measurements to E1, Datacom and unique IP PING testing from Datacom
- High resolution large color touchscreen
- Smart navigation mode display
- Extensive error and alarm generation, detection and indication
- Up to 99 days' continuous test performance
- Save/Recall up to 10 user-defined configurations and 10 groups of results
- Built-in Li-ion rechargeable batteries and AC Power supply as well
- Test results uploaded, conserved and printed by TestManagerPro software via USB interface connected to PC

Basic Functions

E1 Testing

- 120Ω balance and 75Ω unbalance line interfaces
- HDB3 and AMI line codes
- Out-of-service framed and unframed testing

✓ 2Mb/s, N×64Kb/s BER testing

✓ Frame data and alarm monitoring

✓ Clock slip measurement

- In-service framed and unframed testing

✓ Hi-Z and through mode testing

✓ CODE, FAS, CRC4, E-BIT BER testing

✓ Frame data and timeslot activity monitoring

✓ Monitoring of octet code in any selected timeslot

✓ Built-in 64kb/s tone channel monitoring capability

✓ ABCD code monitoring in CAS signaling

✓ TS16 monitoring in CCS signaling

- Double E1 channel testing

✓ Double E1 channels Rx Hi-Z and through mode testing

✓ Double E1 channels Code, FAS, CRC-4, E-BIT BER testing

✓ Double E1 channels FAS/NFAS, CAS Multiframe, CCS timeslot 16 and timeslot activity monitoring

✓ Double E1 channels timeslot data monitoring

✓ Double E1 channels built-in 64kb/s tone channel monitoring capability

✓ Double E1 channels CAS and CCS signaling monitoring
• Round trip delay measurement
• APS delay measurement
• Pulse Mask Measurement
✓ Input E1 pulse shape display
✓ Pulse width measurement
✓ Pulse width and amplitude ratio measurement
✓ Up-edge and down-edge time measurement
✓ Overshoot and undershoot ratio measurement
✓ Pulse amplitude and level measurement
• PCM simulator
✓ Extensive error insertion and alarm generation
✓ Frame data control and monitoring
✓ Idle word insertion in one or more timeslots with programmable pattern
✓ VF tone generation and measurement in one or more timeslots
✓ Listen to any voice channel in the receiver via earphone
✓ Talk to any voice channel in the transmitter via microphone
✓ Can perform the tests of signal level and frequency of the VF channel simultaneously
✓ CAS and CCS signaling generation and monitoring
• Frequency and Offset measurements
• Level measurement
• Transmit clock deviation up to ±999ppm
• Clock source: Internal, Interface and External 2M clock/signal
• Testing pattern: PRBS, Fixed Code, 16-BIT User-programmable word
• Error insertion: Single and Fixed Rate
• Real-time transmit circuit status indication: open/short
• Manual or auto-timer measurements
• Performance analysis according to G.821, G.826, and M.2100

Network Testing
• IP PING
• Trace Route
• IP Config.

Other Functions
• Auto-configuration:
✓ E1 frame format, BERT pattern, the timeslots carried BERT pattern automatic detection and setting for E1 testing
✓ BERT pattern and Tx data rate automatic detection and setting for Datacom testing
✓ BERT pattern and octet timing automatic detection and setting for G.703 64kb/s CO testing
• Real-time clock
• BERT pattern: PRBS, Fixed Code, 16-BIT User-programmable word and QBF
• Error insertion: Single and Fixed Rate
• Reset the results to zero and auto configure
• Manual or auto-timer measurements
• Self-check, keyboard and LED testing
• Performance analysis according to ITU-T G.821, G.826 and M.2100
• Histogram analysis of error and alarm events
• Upgradeable software via USB interface

Option 1: Jitter Testing
• Peak-to-peak jitter measurement
• Jitter measurement comply with O.172 filter (18-100kHz)
• Hit seconds and hit free seconds counts

Option 2: Datacom Testing
• Datacom (V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530 and EIA-530A) BER testing
• Asynchronous BER testing with baud rate 50b/s～57.6b/s
• Synchronous BER testing with data rate 1.2kb/s～2048kb/s
• DTE or DCE equipment emulation
• Synchronous clock source selectable
• Frequency measurement
• Handshaking signals control and monitoring

Option 3: G.703 64kb/s CO Testing
• G.703 64kb/s Codirectional BER testing
• Octet timing control and monitoring
• Frequency and offset measurement
• Transmit clock source: Internal and Interface

Option 4: Mux & Demux Testing
• E1-Datacom synchronous 64kb/s, N×64kb/s BER testing
• E1-G.703 CO synchronous 64kb/s BER testing
• Frequency and Offset measurement of Rx interface
• Handshaking signals monitoring of Datacom interface
• E1 framed data and alarm monitoring

Option 5: Drop & Insert Testing
• "Insert" mode: Insert synchronous 64k, Nx64kb/s data from Datacom or G.703 CO interface to one or more timeslots of E1 signal
• "Drop" mode: Drop one or more timeslots data from E1 signal to Datacom or G.703 CO interface
• "Insert + Drop" mode: Insert and drop one or more E1 timeslots data from or to Datacom or G.703 CO interface

Specifications

1) E1 Testing

Internal Clock
2048Kb/s ± 10ppm

Frequency Deviation
±999ppm

Line Interfaces
75Ω (Unbalanced)
120Ω (Balanced)
High Input Impedance>2KΩ

Line Code
HDB3, AMI

Frame Type
Unframed, PCM30, PCM30CRC, PCM31, PCM31CRC

Receiving Sensitivity
> -43dB

Tx Clock Source
Internal, Interface and External 2MHz clock or HDB3 signal

Pulse Mask Measurement
Comply with G.703

Jitter Measurement
Comply with G.823, O.172

Frequency Measurement
Accuracy: ±1Hz

Offset Measurement
Accuracy：±1ppm
Range：-999ppm～+999ppm

VF Insertion
Frequency: 200Hz ～ 3400Hz, Step: 10Hz
Level: -60dBm ～ +3dBm
Microphone mode

VF Measurement
Frequency: 200Hz ～ 3400Hz,
Accuracy: ±1Hz
Level range: -60.00dBm ～ +3.14dBm

Delay Measurement
Accuracy: ±1μs

G.703 64kb/s CO Testing
Line Rate
64kb/s ± 100ppm

Line Interface
120Ω, Balanced

Line Code
AMI

2) Datacom Testing

Line Interfaces
V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530, EIA-530A

Data Rate
ASYNC: 50, 75, 150, 300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4, 57.6kb/s
SYNC: 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s, N×64kb/s (N=1～32)

Test Patterns
PRBS: 2^{23}-1, 2^{20}-1, 2^{15}-1, 2^{11}-1, 2^{9}-1, 2^{6}-1
Fixed Code: 1111, 0000, 1010
16-BIT: User Programmable Word
PRBS Polarity: Normal or Inverted
QBF: QBF1, QBF2, QBF3, QBF4

LED Alarm Indications
SIG LOSS, AlARM, PAT LOS, ERROR, HISTORY

Error Insertion
Type: BIT, FAS, CODE, CRC4, E-BIT
Single, OFF, Fixed Rate: 10^{-2}, 10^{-3}, 10^{-4}, 10^{-5}, 10^{-6}, 10^{-7}

Performance Analysis
ITU-T G.821, G.826 and M.2100

Serial Port
USB Connector

Display
4.3 inch large size display with backlit color touch Screen

Rechargeable Battery
Li-ion battery, continuous working for 4 hours

Recharge Time
Approx. 2 hours

Power Supply
AC Adapter:
Input: 100V ~ 240VAC, 50/60Hz
Output: 12VDC /1.5A
Battery:
Li-ion battery

TestManagerPro Software
Operating System: WIN98/ME/2000/NT/XP

Operating Temperature
0℃～50℃

Storage Temperature
-30~+70℃

Humidity
5%~95% non-condensing

Dimensions
240mm×102mm×55mm （L×W×H）

Weight
Approx. 750g

Configurations

E1/Datacom Transmission Analyzer 1set
AC Power Adaptor 1pcs
E1 75Ω Unbalanced Test Cable 2pcs
E1 120Ω Balanced Test Cable 1pcs
Li-ion Rechargeable Battery (Built-in) 1pcs
USB Communication Cable 1pcs
TestManagerPro Software CD 1pcs
Waterproof Package 1pcs
User's Manual 1pcs
Quality Certificate Card 1pcs
Maintenance Card 1pcs
Packing List 1pcs

Option Cable

Datacom Adapter Cables 4pcs
Datacom Interface Loop-back Connector 1pcs
G.703 CO Test Cable 1pcs

Ordering Information

XG2330 ..... E1/Datacom Transmission Analyzer (option excluded)
Option 1 .....Jitter Testing (optional)
Option 2 .....Datacom Testing (optional)
Option 3 .....G.703 64kb/s CO Testing (optional)
Option 4 .....Mux & Demux Testing (optional)
Option 5 .....Drop & Insert Testing (optional)

For more information or a directory from sales offices, please send inquiry to mail address:sales@xgxc.com

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